



**University of
Zurich**^{UZH}

**Zurich Open Repository and
Archive**

University of Zurich
University Library
Strickhofstrasse 39
CH-8057 Zurich
www.zora.uzh.ch

Year: 2017

Coming to the United States for a stroke research fellowship

Li, Zixiao ; Katan, Mira

DOI: <https://doi.org/10.1161/STROKEAHA.117.018084>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-142949>

Journal Article

Accepted Version

Originally published at:

Li, Zixiao; Katan, Mira (2017). Coming to the United States for a stroke research fellowship. Stroke, 48(8):e190-e192.

DOI: <https://doi.org/10.1161/STROKEAHA.117.018084>

Full Title:

Coming to the U.S. for a stroke research fellowship

Cover title:

Stroke research fellowship

Authors:

Zixiao Li, MD¹, PhD, Mira Katan, MD, MS²

¹Department of Neurology, Beijing Tiantan Hospital, Capital Medical University, Beijing China (Z.L); ²University Hospital of Zurich, Department of Neurology, Stroke Center, Zurich, Switzerland (M.K).

Corresponding authors:

Mira Katan, MD, MS

Department of Neurology, University Hospital of Zurich

Frauenklinikstrasse 26, 8091 Zürich, Switzerland

Tel: +41 (0)44 255 47 32

E-mail: mira.katan@usz.ch

Word count: 1921

Key words: Stroke, Research, Fellowships

Subject terms: Stroke, Health Services, Clinical Research

Introduction

Stroke research fellowships are post-graduate training opportunities for vascular neurologists or other candidates (M.D. or Ph.D.), desiring advanced training in the research field of cerebrovascular disease.

There are several universities in the United States that are among the highest-ranked research institutions in the world in terms of scientific and medical research activity. These institutions, many with specialized, renowned stroke centers, offer research fellowships in which the stroke fellow, under the guidance of experienced mentors, can dedicate him- or herself to stroke research on a full-time basis.

To gain the most from a stroke research fellowship, it is advisable to prepare oneself well in advance of applying. Previous research activity, including publications in peer-reviewed research journals, increases the probability of obtaining funding for and acceptance to a stroke research fellowship. It is important that one choose a mentor and institution wisely — not just from a career point of view — but also to suit personal needs. Indeed, consider a lesser known institution if a mentor is particularly supportive and inspiring.

Going abroad and adapting to different environments or cultures opens the mind, and helps the fellow to conduct creative and innovative research. Ideally, such a transatlantic experience will afford the fellow valuable personal experience, provide him or her with a solid research framework, and build a network for future collaborative efforts, acting as a catalyst for a successful independent career.

Why choose the US for a stroke research fellowship?

There is a long tradition of US excellence in clinical and epidemiological stroke research.¹ When evaluating educational systems, several US universities have been found to excel in training for biomedical and health sciences (for example, according to the CWTS Leiden Ranking and the Shanghai Ranking systems). Teaching and mentoring both play an important role in such training and are critical to its continued success. Several US universities provide excellent programs in patient-oriented research that give fellows the option of obtaining a masters degree in a relevant field, such as clinical epidemiology or biostatistics. Moreover, the US offers opportunities to participate in large stroke studies, such as the Reasons for Geographic and Racial Differences in Stroke (REGARDS) project and the Northern Manhattan Stroke (NOMAS) study.

Also, working or training in a new country benefits a fellow by exposing him or her to different cultural backgrounds and work practices². The ability to adapt to new environments and to succeed without an accustomed support system is an important lesson, useful for any future position. Living and working abroad can promote professional and personal growth by challenging inherent beliefs, thus paving the way for fresh insights and broader perspectives. If you want to lead your own independent research group, you may need to demonstrate your resourcefulness and resilience. Having succeeded far from home is excellent evidence.

Also, such an experience in the US will enhance the fellow's English-language competence, particularly his or her manuscript-writing skills.

But more importantly, career-long research bonds forged during such a fellowship may help to establish the next generation of international research consortia². Maintenance of such

international collaborations will be helpful for future careers, especially in research fields in which very large patient numbers are needed, as for instance, in the study of genetics or rare diseases such as child stroke.

Preparing for a stroke research fellowship

Stroke research fellowships may vary in style of mentoring and in structure, but the principle objective of promoting advancement in stroke research is the same. Opportunities for stroke fellowship are available for those who prepare well. First, if you plan to apply for a research fellowship position, it is essential before applying to have demonstrated a strong interest in clinical or basic research, and have shown a commitment to a career in academic stroke. Prior to submitting an application, it is highly recommended that you already have published in peer-reviewed journals. Further, it would be helpful if you have shared, at national or international conferences, such as International Stroke Conference, either oral or poster presentations of your previously conducted research. Such presentations demonstrate that you possess the communicative skills essential for discussion of your research with peers and colleagues. Moreover, having engaged in these activities, you will find that obtaining funding for your proposed fellowship will be easier.

Second, as a foreign applicant, proficiency in the English language is extremely important. You must be able to discuss your research with your mentors and colleagues, and to express your opinions clearly.

Additionally, although there are no standard application procedures, there are several highly recommended components: a well-structured Curriculum Vitae (CV); two letters of

recommendation; a personal statement describing your background and training plan; and evidence of funding support for the fellowship³.

Selecting a fellowship and finding a mentor

You will need to find an institution or mentor that matches your interests and goals, and allows expansion of your knowledge base in the stroke field. During the fellowship, acquisition of theoretical and practical research skills will be important, as these skills will provide you with significant advantages when you return to your native country. For example, earning a master's degree during your fellowship (e.g., biostatistics or clinical epidemiology) from a public health school affiliated with your institution would be a worthy endeavor.

Furthermore, much can be learned about a fellowship from fellows who have graduated from it or have worked under a given mentor. Do graduated fellows remain actively involved in research similar to that undertaken as a fellow? This information may be of assistance to you in setting your expectation for a given stroke program or mentor. Pay attention to whether graduated fellows have published, whether they have been promoted, and whether they have received major funding for further research. All of these are indicators of how the fellowship can integrate with your career goals.

Finally, it is important to get a feeling as to whether a mentor or an institution has a mutual interest in you as a fellow. Do they encourage you to apply to the program? Are they supportive of your application for financial funding?

How to approach your mentor and institution

Again, prepare yourself, and learn as much as you can about the program to which you are applying by visiting its website, asking questions of and advice from other persons in the field, and closely reading landmark publications that your prospective mentor, as well as the faculty of his department, have produced. Organize simulated interviews with colleagues at your hospital or institution who have been through similar processes, as you are probably not the first person seeking a fellowship.

It is important to make a conscious effort to establish a personal relationship with a potential mentor early in the application process. This process is facilitated if your home institution is affiliated with the institution that you are interested in, but if this is not the case, you might try to contact a potential mentor directly via e-mail or in person at a conference.

Remember that such an approach, when pursued with courtesy and respect, can demonstrate your strong character and resolve in pursuing this career path.

When you do make contact with your potential mentor, highlight your strengths, but also indicate clearly that you are eager to learn more. It is important to convey precisely how and why you believe that the prospective institution or mentor can help you become a successful researcher, while at the same time communicating what you can bring to the institution. Fellows may bring independent peer-reviewed funding, expertise that is not available in the host institution (e.g. laboratory/imaging methods), and access to future international collaborations. Be clear about your research goals for the next one to two years and discuss what you would like to achieve at the institution. Finally, explain what you wish to accomplish in your academic career in the next five to ten years.

Challenges that come with a stroke research fellowship

Living and working abroad can be difficult. navigating bureaucracy, finding appropriate housing, communicating complex concepts in an unfamiliar language, and living without your support network of family and friends, are significant challenges that may result in homesickness, isolation, and a sense that you are not integrating properly with your host institute. These are common experiences, but fellows tend to adjust and even thrive in time, eventually emerging from the experience feeling empowered, well-connected, and independent.

Fellowships can also bring financial challenges, such as transient pay reductions¹. Grants, either through home institutions or national funding entities, can help cover most expenses, but often not all¹. However, these short-term drawbacks may be offset by an increase in the acquisition of research skills, which, long-term, will improve future job prospects.

Activities of a stroke research fellow

Stroke research fellowships are based at a research center. There, fellows work under the supervision of mentors, and enjoy dedicated research time. In fact, all fellowship activities are designed to train fellows to conduct high-quality research in the field of stroke. The activities undertaken will vary depending on the projects assigned to the fellow. Generally, research fellowships include the following components: (1) exposure to hypothesis generation, research design and conduction of research, biostatistics, project management, and presentation of research, (2) direct mentoring from senior research faculty who share training and supervisory

responsibilities, (3) practical experience in the form of a research project, and (4) instruction in manuscript submission and, in certain cases, grant application.

Career options after a stroke research fellowship

Most international stroke-research fellows return home after their fellowship to pursue further stroke research. This is especially true for those sponsored by their home institution or country. Sometimes, eligible fellows are granted long-term positions at the institution where their fellowship was undertaken, and are thus able to continue their ongoing research. However, there are significant hurdles to getting these long-term positions, and a fellowship is not in itself a ticket to finding them. Often, fellows don't qualify for clinical work in the US, where one must pass the United States Medical Licensing Examination. Furthermore, research fellows must have enough research funding to support their salary at a given US institution.

Overall, in the increasingly competitive job market, successful completion of a fellowship can be the deal-maker to be shortlisted for an appointment, when the background and other factors among applicants for a position are otherwise similar.

Regardless of any transitory challenges, the long-term benefits generated by the knowledge, research, personal connections and professional networks established during your fellowship are of unquantifiable value. Long after their fellowships have been completed, fellows continue to engage in the collaboration and exchange of ideas so essential to enhanced stroke care and innovative stroke research.

References

1. Asplund K, Eriksson M, Persson O. Country comparisons of human stroke research since 2001: A bibliometric study. *Stroke*. 2012;43:830-837.
2. Fabris E, Kennedy MW. International subspecialty fellowship training, the path for cardiologists of tomorrow?: A european perspective. *Journal of the American College of Cardiology*. 2017;69:1200-1203
3. Krystle Shafer. EMRA Fellowship Guide 2016. Edition Number. Emergency Medicine Residents' Association; 2016: 127-133.
https://www.emra.org/uploadedfiles/emra/emra_publications/. 06, 16,2017.